

REMARKS

Claims 1-7 were pending in this application when examined. On the Office Action Summary page, the Examiner indicates that claims 1-5 are pending. However, claims 6-7 are also pending, and are withdrawn from consideration by the Examiner as non-elected.

Claim 1 is amended to more clearly recite the method steps. Support for amended claim 1 can be found at paragraphs [0008], [0009] and [0022]-[0029] of the published application (US 2006/0150377), and Figs. 1 and 2.

Support for amended claim 2 can be found at paragraph [0013] of the published application.

Claims 3, 6 and 7 are amended to make editorial changes that are self-explanatory.

Claims 4 and 5 are cancelled.

Claims 8 and 9 are added. Support for new claims 8 and 9 can be found in paragraphs [0010]-[0012] of the published application.

New Fig. 3 is added.

The specification is amended to insert sub-headings and to include a description of Fig. 3.

I. The Present Invention

According to the present invention, melt-spun filaments are solidified by suction and by the hydrodynamically intertwining process in a first curing stage. In the hydrodynamically intertwining process, the filaments are solidified, but remain mostly unbonded. The bonding is done in further hydrodynamically intertwining processes.

In the process of the present application, the screen band is removed after the first curing stage of hydrodynamically intertwining, and the filaments are transported without transportation means (see Figs. 1 and 2).

Fig. 1 shows the filaments (1) deposited on the screen band (2), where the deposited filaments are held on the screen band by suction (3). The filaments are compacted by a compacting band (4), and are then transported to the first hydrodynamic intertwining station (5,6). After the first hydrodynamically intertwining stage, the screen band (7) is removed, and

the now solidified, but mainly unbonded, filaments can be transported to further processing steps (i.e., curing steps) without the support of a screen band.

Thus, according to the present invention, the filaments are deposited onto a continuous screen band, and are transported on the screen band through the first curing stage. During this stage, the filaments are hydrodynamically intertwined by a water jet. Throughout the entire hydrodynamic intertwining process of the first curing stage, the filaments are fixed through suction zones on the screen band. Therefore, the filaments are already sufficiently cured in the first curing stage so that the screen band can be removed after this first curing stage.

Thereafter, the cured filaments are transported without a transport belt (i.e., screen band) to additional curing stages, whereby disturbances in the deposited filaments do not occur.

II. Objection to the Drawings

The Examiner objects to the drawings under 37 CFR 1.83(a). The Examiner asserts that the subject matter of claim 2 that the screen band is guided through all curing stages, must be shown or the feature must be cancelled from the claim.

37 CFR 1.83(a) states, "The drawing in a nonprovisional application must show every feature of the invention specified in the claims. **However, conventional features disclosed in the description and claims, where their detailed illustration is not essential for a proper understanding of the invention, should be illustrated in the drawing in the form of a graphical drawing symbol or a labeled representation (e.g., a labeled rectangular box)**" (emphasis added).

Amended claim 2 recites "The method as claimed in claim 1, further comprising guiding the filaments through one or more additional curing stages."

Applicants submit herewith Fig. 3, which depicts the process of the present application as in Fig. 1, and further includes a labeled representation that the cured geotextile (8) can be guided through one or more additional curing stages (9). Support for Fig. 3 can be found in paragraph [0013] of the published application, which indicates that, after curing in the first curing stage, the geotextile is sufficiently cured, such that it can be guided through possible further curing stages.

Applicants take the position that Fig. 3 adequately describes the features disclosed in claim 2 such that one of ordinary skill in the art would understand the subject matter of the

claimed invention. Accordingly, reconsideration and withdrawal of the objection are respectfully requested.

III. Claim Rejection Under 35 U.S.C. § 112, 2nd paragraph

The Examiner rejects claims 1-5 under 35 U.S.C. § 112, second paragraph, as being indefinite. Applicants respectfully traverse the rejection.

Claim 1

The Examiner states that the state of cure in relation to the process steps is indefinite. The process of claim 1 has been amended to recite “transporting the filaments to a **first curing stage**, and hydrodynamically intertwining the filaments **in the first curing stage**, wherein the filaments are sufficiently supported such that the filaments may be transported to **additional curing stages** without support from the screen band.” Claim 1 is also amended to delete “in this manner are already sufficiently cured in the first curing stage.”

Accordingly, claim 1 positively recites the curing stage in the claimed process.

Claim 2

As discussed above, claim 2 is amended to recite “further comprising guiding the filaments through one or more additional curing stages.” Fig. 1 and paragraph [0013] of the published application fully support the amendments.

Mesh Size

Claims 4 and 5 are cancelled.

New claim 8 recites “the mesh size of the screen band is $1-8\text{ cm}^{-1}$.” One of ordinary skill in the art would recognize that a mesh size of “ $1-8\text{ cm}^{-1}$ ” is 1-8 openings per square centimeter.

New claim 9 recites “the screen band serves as a support and has a mesh size of $10-100\text{ cm}^{-1}$.” One of ordinary skill in the art would recognize that a mesh size of “ $10-100\text{ cm}^{-1}$ ” is a screen size of 10-100 openings per square centimeter.

The Screen Band as a Filter or Support

Claims 4 and 5 are cancelled.

New claim 8 recites “the screen band serves as a filter, and water jets act through the screen band,” and new claim 9 recites “the screen band serves as a support.”

Paragraph [0010] of the published application states, “Depending on the disposition of the curing device, in the first curing stage the water jets act through the screen band and/or the screen band serves as a support.” Accordingly, in one aspect of the claimed process (claim 8), water jets are sprayed through the screen band onto the filaments. In this case, the screen band serves as a filter having a mesh size of 1-8 cm⁻¹.

Alternatively, in a second aspect of the claimed process (claim 9), the screen band serves as a support for the filaments. In this aspect, the mesh size is 10-100 cm⁻¹, which reflects more openings per square centimeter in the screen band, because the screen band serves as a support for the filaments, rather than as a filter.

IV. Claim Rejection Under 35 U.S.C. § 102

The Examiner rejects claim 1 and 2 under 35 U.S.C. § 102(b) as being anticipated by Kobayashi (EP 1101854). Applicants respectfully traverse the rejection.

Claim 1 recites “A method for the production of geotextiles of melt-spun filaments through hydrodynamic intertwining, said method comprising: depositing melt-spun filaments onto a continuous screen band in a suction zone, wherein the filaments are held onto the screen band by suction, **compacting the filaments onto the screen band**, transporting the filaments to a first curing stage, **and hydrodynamically intertwining the filaments in the first curing stage, wherein the filaments are sufficiently cured such that the filaments may be transported to additional curing stages without support from the screen band.**”

Kobayashi does not teach or suggest a method comprising “**compacting the filaments onto the screen band**, transporting the filaments to a first curing stage, **and hydrodynamically intertwining the filaments in the first curing stage, wherein the filaments are sufficiently cured such that the filaments may be transported to additional curing stages without support from the screen band,**” as recited in claim 1.

As can be seen in Fig. 1 of Kobayashi, the web (22) is transported along an endless conveyor belt (3) to the high pressure water jet ejector (4), and then to the take-up roller (see Fig. 1 and paragraph [0012]).

On the other hand, the present invention includes the step of “compacting the filaments onto the screen band” with the compacting band (4), as can be seen in Fig. 1 of the present application. Accordingly, by **“compacting the filaments onto the screen band,”** and **“hydrodynamically intertwining the filaments in the first curing stage,”** as recited in claim 1, “the filaments may be transported to additional curing stages without support from the screen band” in the presently claimed invention.

In addition, as can be seen in Fig. 1 of Kobayashi, nonwoven fabric (26) must continue to be stretched around rollers, and then rolled up into a take-up roller (6) (see col. 3, lines 33-36 and Fig. 1). Thus, Kobayashi’s fabric requires at least the support of tension from a take-up roller (6) throughout the process. Consequently, the nonwoven fabric (26) of Kobayashi is not made up of filaments **“sufficiently cured such that the filaments may be transported to additional curing stages without support from the screen band,”** as recited in claim 1.

In view of the foregoing, it is clear that Kobayashi does not teach each and every feature of claim 1. Therefore, claim 1 is not anticipated by the reference.

Claim 2 depends from claim 1, and thus also is not anticipated by the reference.

V. Claim Rejections Under 35 U.S.C. § 103

The Examiner rejects claim 3 under 35 U.S.C. § 103(a) as being unpatentable over Kobayashi, in view of Kampen (DE 10002451, Derwent abstract) and Kelb (US 3,601,860); rejects claim 4 under 35 U.S.C. § 103(a) as being unpatentable over Kobayashi, in view of Kelb; and rejects claim 5 under 35 U.S.C. § 103(a) as being unpatentable over Kobayashi, in view of Simpson (US 5,023,130).

As discussed above, Kobayashi does not teach a method comprising **“compacting the filaments onto the screen band,** transporting the filaments to a first curing stage, **and hydrodynamically intertwining the filaments in the first curing stage, wherein the filaments are sufficiently cured such that the filaments may be transported to additional curing stages without support from the screen band,”** as recited in claim 1.

Additionally, Kobayashi fails to provide any motivation for one of ordinary skill in the art to arrive at Applicants' invention. In fact, Kobayashi fails to recognize the advantage of filaments being sufficiently cured such that they may be transported to additional curing stages without support from the screen band. Thus, Kobayashi fails to render Applicants' claims obvious.

Kampen is cited by the Examiner as disclosing a suction pressure of 10-50 mbar; Kelb is cited by the Examiner for teaching suction pressure and mesh size; and Simpson is cited by the Examiner as teaching mesh size. Accordingly, Kampen, Kelb and Simpson do not remedy the deficiencies of Kobayashi, which are discussed above.

Therefore, claim 1 would not have been obvious over Kobayashi, Kampen, Kelb and Simpson. Claim 3 and new claims 8 and 9 depend from claim 1, and thus also would not have been obvious over the references.

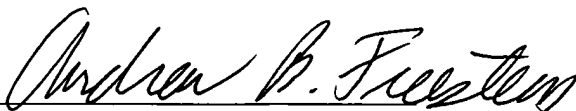
VI. Conclusion

For these reasons, Applicants take the position that the presently claimed invention is clearly patentable over the applied references.

Therefore, in view of the foregoing amendments and remarks, it is submitted that the rejections set forth by the Examiner have been overcome, and that the application is in condition for allowance. Such allowance is solicited.

Respectfully submitted,

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Enclosure: New Sheet (Fig. 3)

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